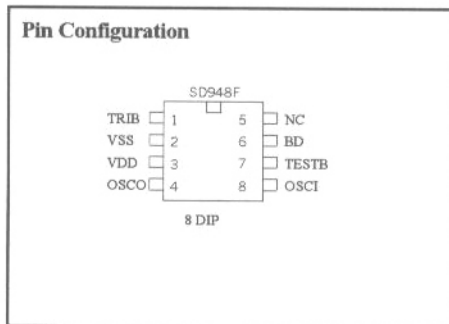


## SD 948F

### 768 Notes Simple Melody Generator

**Features**

- 768 notes memory.
- Power supply range: 1.3V to 3.3V.
- Low power consumption.
- 14 tempos available.
- 15 beats available.
- 27 notes (including rest) available.
- 1 sequence trigger key.
- One chip envelope modulator.
- Direct piezo drive.
- Dynamic speaker can be driven with external NPN transistor.
- Substrate Vdd.


**Pin Description**

| Pin No. | Symbol | Description                       |
|---------|--------|-----------------------------------|
| 1       | TRIB   | Sequence trigger pin, low active. |
| 2       | VSS    | Negative power supply.            |
| 3       | VDD    | Positive power supply.            |
| 4       | OSCO   | Oscillator output pin.            |
| 5       | OSCI   | Oscillator input pin.             |
| 6       | TESTB  | Test pin.                         |
| 7       | BD     | Melody output.                    |
| 8       | NC     | No connection.                    |

**Absolute Maximum Ratings**

| RATING                | VALUE                |
|-----------------------|----------------------|
| DC Supply Voltage     | <5.5V                |
| Input/Output Voltage  | VSS-0.3V to VDD+0.3V |
| Operating Temperature | 0° C to 100° C       |
| Storage Temperature   | -25° C to 100° C     |

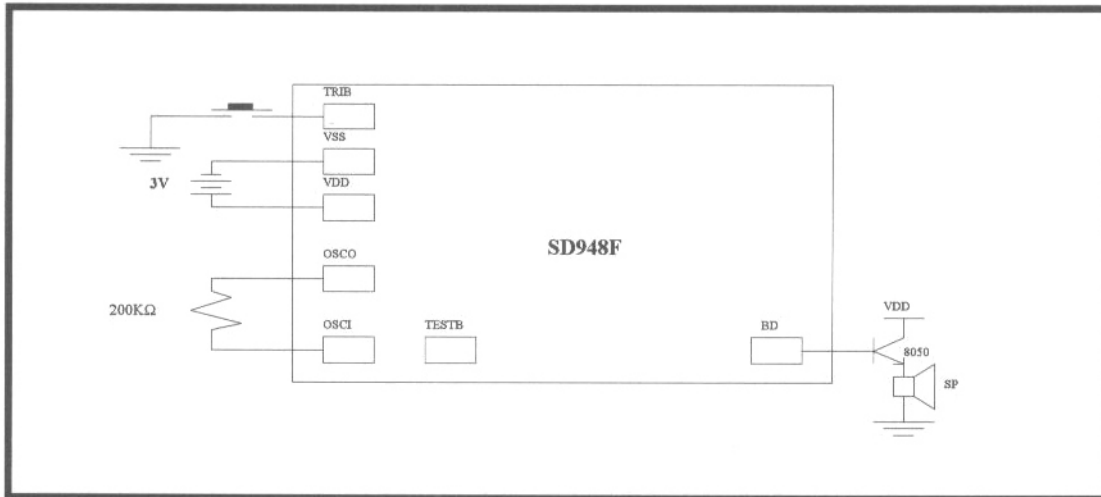
**Notice:** Stress greater than those listed under **Absolute Maximum Ratings** may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended period may affect reliability.

**Electrical Characteristics**

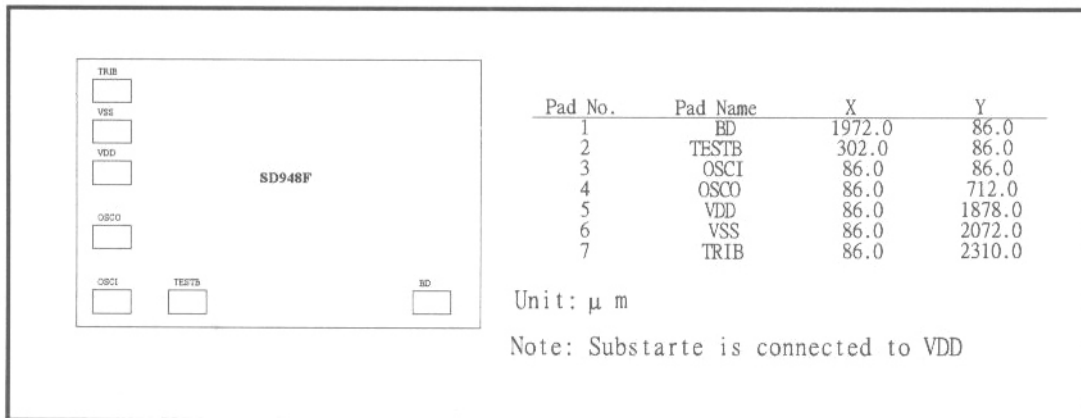
( VDD =3.0V, VSS = 0V, Ta = 25°C, unless otherwise specified)

| Parameter         | Symbol | Min. | Typ.  | Max. | Condition |
|-------------------|--------|------|-------|------|-----------|
| Operating Voltage | Vdd    | 1.3V | 3V    | 3.3V | ---       |
| Standby Current   | Istb   | ---  | 2μA   | 10μA | No load   |
| Operating Current | Iop    | ---  | 0.2mA | 10mA | No load   |

**Application Circuit**



**Bonding Diagram**



**Song List****948F-03**

1. American Patrol
2. Rabbits
3. Oh! My Darling Clementine
4. Butterfly
5. London Bridge is Falling Down
6. Row Your Boat
7. Are You Sleeping
8. Happy Birthday to You
9. Toy Symphony
10. Home Sweet Home
11. Lullaby
12. She Wore a Yellow Ribbon

**948F-06**

1. Twinkle Twinkle Little Star
2. Forge In The Forest
3. Toy Symphony
4. American Patrol
5. Long Long Ago
6. Oh! My Darling Clementine
7. Coo Coo Waltz
8. L'eau Vive
9. Chim Chim Cherece
10. Tree
11. Clock
12. Mary Had A Little Lamb
13. Wiegenlied
14. Sur Le Pont D'avignon
15. Yankee Doodle
16. Little Brown Jug

**948F-07**

1. We Wish You A Merry Christmas
2. Santa Claus Is Coming To Town
3. Jingle Bells
4. Deck The Halls
5. O Little Town Of Bethlehem
6. It Came Upon The Midnight Clear
7. Silent Night
8. Oh! Christmas Tree
9. O Come, AllYe Faithful
10. Hark! The Herald Angles Sing
11. Silver Bells
12. Angles We Have Heard On High
13. Joy To The World
14. The First Noel
15. The Twelve Days Of Christmas
16. Up On The Housetop